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TRICHOPTERA

M. E. MOSELY

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1. TRICHOPTERA

By MARTIN E. MOSELY *X²M*

(With Plates I—III)

THE TRICHOPTERA taken on the British Museum Expedition to East Africa form a very representative collection. With the exception of the Polycentropidae, all the Families known on the African continent are present.

It is, perhaps, a little surprising that species of the genus *Dipseudopsis*, belonging to the missing Family, were not taken as the genus is very widely distributed throughout the continent.

The Sericostomatidae are represented by four species of the genus *Goerodes*. A considerable number of specimens of most of the species were taken. Of the Calamoceratidae, only one example was secured, *Anisocentropus usambarensis*. The Leptoceridae are well represented, species from no fewer than six genera being present. The Hydropsychidae appear in the genera *Hydropsyche*, *Cheumatopsyche* and *Diplectronella*, examples in the first genus having been taken in great numbers. Two species in the Psychomyiidae, of which, it is of interest to note, one is a *Lype*, a genus not hitherto recorded in Africa, four in the Philopotamidae, one in the Rhyacophilidae, and four in the Hydroptilidae, complete the list. The captures in the last two Families have necessitated the erection of three new genera.

Records of species taken in the Ruwenzori Range are covered by the dates I.xii.1934 to 3I.i.1935, and, unless otherwise indicated, the types are in the British Museum collection.

SERICOSTOMATIDAE

THE GENERA *Goerodes*, *Crunoeciella* AND *Crunobiodes*

Dr. Edwards brought home from Uganda long series of two species described by Navás as *Crunoeciella nudata* and *Crunoeciella inferior* as well as a few examples of allied species.

As there is some confusion between *Crunoeciella*, *Crunobiodes* and *Goerodes*, it is desirable to clear up the position as far as possible here.

In the Ann. Mus. Zool. Sc. U.R.S.S., 1927, Martynov pointed out that certain species which had been placed in Ulmer's genus *Crunoeciella*, erected to take a Madagascan species *brunnea*, failed to conform to the characters of this

genus; he therefore erected *Crunobiodes* in which they might be placed. The main characters of this new genus are firstly, a fold in the post-costal region of the anterior wing and secondly a pattern of genitalia showing, with some minor specific modifications, two pairs of dorsal processes and a branched inferior appendage, one branch of which is always situated on the upper margin, near the base, and directed upwards. This conformity of neuration and genitalia appears to be common to a considerable group of species and is first met in Ulmer's *Goerodes*, a genus erected in 1907 and consequently having priority over *Crunobiodes*. A study of numerous African species in this group, all of which conform fairly well with this pattern of genitalia, has shown that there is, in almost every case, a modification in the position and length of the post-costal fold which might be considered by some to be of generic value.

In the Lepidostomatinae, the sub-family of the Sericostomatidae to which these species belong, neuration seems to be extremely abnormal in individual species, more particularly in the ♂ sex, whilst in the ♀ the neuration is usually regular. It has generally been the practice to accept neuration as giving the generic characters and to base the specific distinctions on the genitalia, but to make this custom into a hard and fast rule in the Lepidostomatinae would appear to bring about a position in which, eventually, every species would require a separate genus to contain it.

It is here suggested that, in this sub-family, the practice should be reversed and that where species can be conveniently grouped on a similarity of genitalia, this character should be considered as pertaining to the genus and that the species should be separated on neuration. This suggestion is not really revolutionary as it was foreshadowed as far back as 1876 when McLachlan, writing of another genus, *Dinarthrum*, in this sub-family, states "there probably exist a number of species that practically will find a home in this genus but presenting slight differences *inter se* in the antennae, palpi and *neuration, the latter being of such a character as to defy description.*" The italics are mine.

I propose, therefore, to re-define Ulmer's *Goerodes* and to transfer to it the species *nudata*, *inferior*, and *excelsior*, represented in Dr. Edwards's collection and also the South African species *caffrariae* Barnard, all unsuitably placed in *Crunocciella*.

With regard to this Madagascan genus, Dr. Zerny of the Vienna Museum very kindly sent me the type of *C. brunnea* with permission to clear the genitalia in KOH, and I am thus enabled to supplement here the good figures of the dried insect published by Ulmer in his original description. It will be noted that, in addition to the absence of the post-costal fold, the genitalia, while closely akin, scarcely conform to the *Goerodes* pattern. This type of *C. brunnea* was found to be in fragments, and to preserve them, these have now been returned to the Vienna Museum in the form of a balsam preparation.

Crunoeciella Ulmer

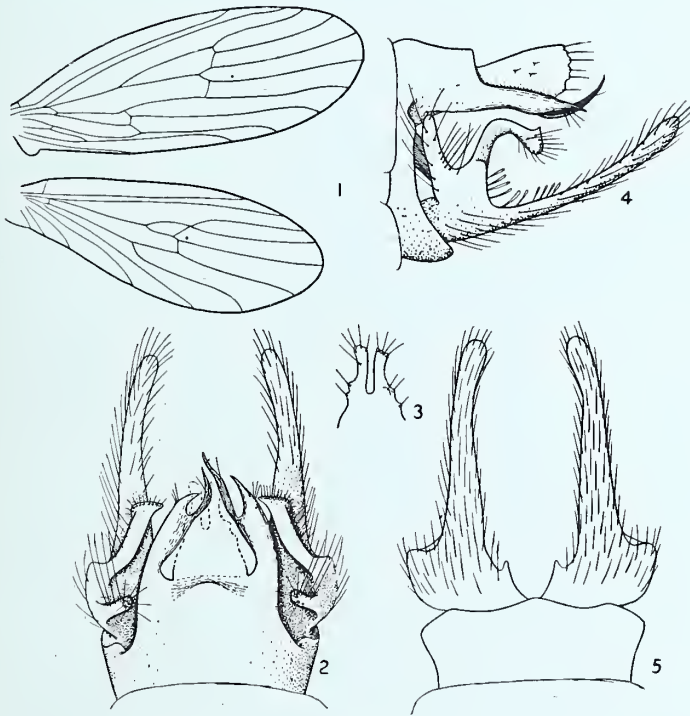
Crunoeciella Ulmer, 1905, Ann. Naturh. Mus. Wien, 20: 68, figs.

Spurs, 2, 4, 4. Antennae long, basal joint longer than the head. Wings covered with thickened hairs; neuration as shown in the figure with no post-costal fold in the anterior wing. The structure of the genitalia is detailed in the specific description.

Genotype and only known species, *C. brunnea* Ulmer, of Madagascar.

***Crunoeciella brunnea* Ulmer (Figs. 1-5)**

Crunoeciella brunnea Ulmer, 1905, Ann. Naturh. Mus. Wien, 20: 68, figs.



Figs. 1-5.—*Crunoeciella brunnea* Ulmer ♂: 1. wings, 2. genitalia, dorsal, 3. dorsal plate, 4. genitalia, lateral, 5. inferior appendages, ventral.

Genitalia ♂. From above, dorsal plate membranous and cleft to form a pair of finger-like processes with truncate apices, one longer than the other,

showing as a deep plate from the side; below it is a pair of long spines, each bifurcate at the apex, the inner fork long and slender, the outer shorter and broad. Penis short and down-curved. Inferior appendages from the side, very long and slender, curving slightly upwards with the inner surface bearing short, clavate hairs as well as long hairs of the usual type; towards the base of the appendage is a pair, or perhaps a single, widely-bifurcate, upwardly-directed process, the outer fork bent over towards its apex which is much dilated at its lower margin, upper margin produced in a small point; inner fork straight and directed upward; from beneath, there is a small pointed process at the base of the inner margin of each appendage.

MADAGASCAR: Fort Dauphin, Sikova.

Type ♂, the only known specimen, now mounted entirely in balsam, in the collection of the Vienna Museum.

Goerodes Ulmer

Goerodes Ulmer, 1907, Cat. Coll. Selys, fasc. 6 (1): 37-38.

Crunobiodes Martynov, 1927, Ann. Mus. Zool. Acad. Sci. U.R.S.S., 28: 471.

Crunociella Auct.

The genus is here based mainly upon characters furnished by the male genitalia. The species show, in the male, a considerable diversity in the form of neuration of the anterior wings so that the neuration should be considered as of specific rather than generic value. There is, however, one character of neuration which all the males have in common and which may be regarded as of generic importance, namely the presence, in the anterior wing, of a fold in the region of the post-costa, but the scale-lined grooves which so often appear in the Lepidostomatinae, particularly in the *Dinarthrum* group, are wanting. In the female, the neuration of the anterior wing is regular.

I would here like to distinguish between the terms "groove" and "fold." The former is a more or less open furrow, usually but not always situated along the central region of the anterior wing; the latter, a fold of membrane generally in the post-costal region (Martynov's anal groove), possibly welded to the adjacent membrane and simulating a nervure. The insects are uniformly brown of varying shades, the males with wings densely clothed with hairs intermingled, but not invariably, with scales; in the female wings, there are never either scales or folds; the posterior wings in both sexes have a regular neuration.

Basal joint of the antenna unbranched. Maxillary palpi ♂ generally two-jointed, shorter than the labial palpi, terminal joint which is rather obscure, carrying a tuft of dark and much broadened scales. Spurs 2, 4, 4.

Genitalia ♂. All species in the genus conform in a production of the centre

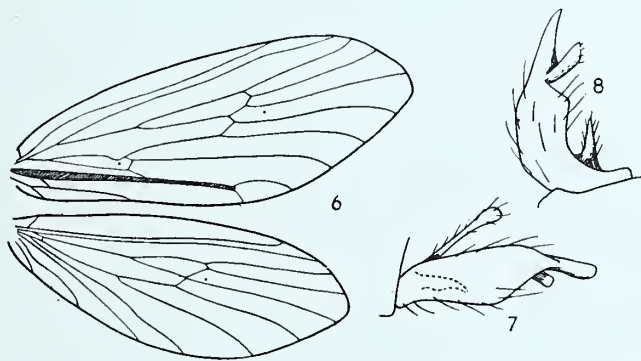
of the dorsal margin of the ninth segment in two pairs of processes, the outer usually appearing as asymmetric, sinuous and very stout spines, the inner varying in form; sometimes these processes are replaced by a plate or plates. The penis short and curved; inferior appendages always branched, the branches varying in number and form. They agree in all species in carrying a more or less erect branch, generally with a dilated apex, arising from the upper margin of the appendage towards the base, as seen from the side.

This pattern of genitalia, though fairly constant in so far as the South African species are concerned, is in the Indian and Far Eastern forms inclined to vary in respect to the processes of the dorsal plate, so that it is sometimes difficult to fix a dividing line between these paired processes and a structure representing the pairs welded together.

Genotype here designated, *Goerodes cornigera* Ulmer, in the De Selys collection in the Brussels Museum, from Japan.

***Goerodes edwardsi* sp. n. (Figs. 6-8)**

The only conspicuous character by which this species differs from *excelsior* Navás is to be found in the wings. In the latter, these are clothed with hairs



Figs. 6-8.—*Goerodes edwardsi* sp. n. ♂: 6. wings, 7. inferior appendage, lateral, 8. ventral.

and numerous small scales; in *edwardsi*, the vestiture is entirely of hairs, there are no scales. There are also certain differences in neuration, more particularly at the distal end of the post-costal fold.

In the ♂, there are slight differences in the genitalia, especially in the form of the inferior appendages. As, however, only one example of *edwardsi* was taken, allowance must be made for individual variation.

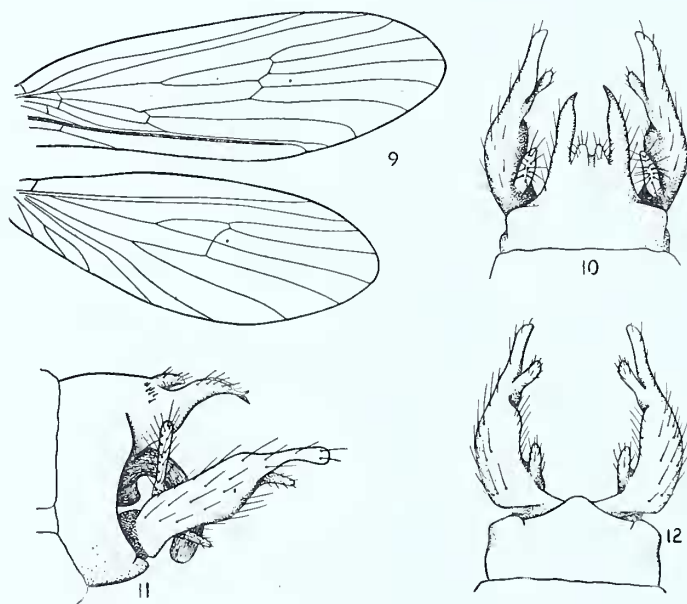
Length of the anterior wing, ♂ 15 mm.

RUWENZORI: Namwamba Valley, 10,200 ft. (*Edwards*). 1 ♂ (type).

Goerodes excelsior (Navás) (Figs. 9-12)

Crunoeciella excelsior Navás, 1931, *Broteria Zool.*, 27: 132-3, fig. 68.

Through the courtesy of Dr. L. Berland of the Paris Museum, I have been enabled to examine the type of this species and to give additional figures of the neururation and genitalia.



Figs. 9-12.—*Goerodes excelsior* Navás ♂: 9. wings, 10. genitalia, dorsal, 11. lateral, 12. inferior appendages, ventral.

Genitalia ♂. Ninth segment produced at the centre of its dorsal margin in two pairs of processes the inner, short, triangular, with serrate outer margins, the outer, asymmetrically sinuous, very strongly chitinized and nearly three times the length of the inner; penis stout, arching strongly downward with

dilated apex, its apical margin slightly excised, inferior appendages four-branched, the main branch, from the side, narrowing suddenly to a rather slender termination with a dilated apex; the second branch arises at the point where the main branch narrows and is short and rather broad, directed distally and slightly downward; the third branch, seen from the side, arises from the upper margin of the main branch, near the base, rod-shaped, without any dilatation of the apex; fourth branch, from beneath, arises at the base of the appendage on its inner margin and is short, rather broad, directed distally and downward.

Length of anterior wing, ♂ 15 mm.

RUWENZORI: Namwamba Valley, 10,200 ft., (*Edwards*) 1 ♂; Nyamgasani Valley, 12-13,000 ft., (*Buxton*) 2 ♂.

Type ♂ in Paris Museum from "Buamba" (presumably Bwamba, West Ruwenzori).

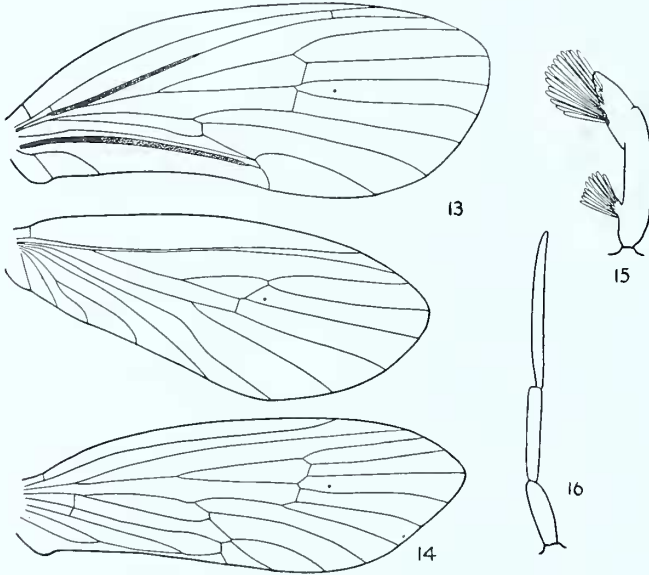
Goerodes inferior (Navás) (Figs. 13-19)

Crunoeciella inferior Navás, 1931, *Broteria Zool.*, 27: 135.

Head fuscous, antenna with the basal joint rather larger than the breadth of the head and oculi together, clothed with dense, fuscous pubescence; palpi membranous, possibly two-jointed, with a tuft of broad, black scales at the apex and a minute, membranous, projecting process or wart towards the base; wings dark fuscous, anterior very broad and rounded, apex considerably dilated, particularly along the posterior margin; both wings covered with long, silky black hairs but no scales; anterior with forks Nos. 1 and 2 and perhaps 5; posterior, fork No. 1 only; discoidal cell of the anterior wing long and rather narrow, about one and a half times as long as its footstalk; that of the posterior, short, distal nervure very oblique; fourth apical cell extending not so far inward as the base of the discoidal cell.

Genitalia ♂. Ninth segment produced at the centre of its dorsal margin in two pairs of processes, the inner, rather more slender than the outer; the processes terminate in strongly chitinized claws which are asymmetric as to the direction in which they turn, some up, some down; from the side, the outer process is sinuous along its lower margin; penis short and slender, arching downward; inferior appendages three-branched; main branch very stout at its base, from the side, slightly dilated at about three-quarters of its length on its lower margin which is there deeply excised so that there is a triangular, clavate apex to the branch; from above and beneath, the portion of the appendage

beyond the excision forms a narrow, finger-like first branch; the second branch arises towards the base of the appendage from its upper margin; from the side, it is moderately long with a slender stem and much dilated, clavate apex; third branch from beneath; very slender, rather short, arising from the base of the lower margin; from beneath, the appendages are separated by a



Figs. 13-16.—*Goerodes inferior* Navás: 13. wings ♂, 14. anterior wing ♀, 15. maxillary palpus ♂, 16. labial palpus ♂.

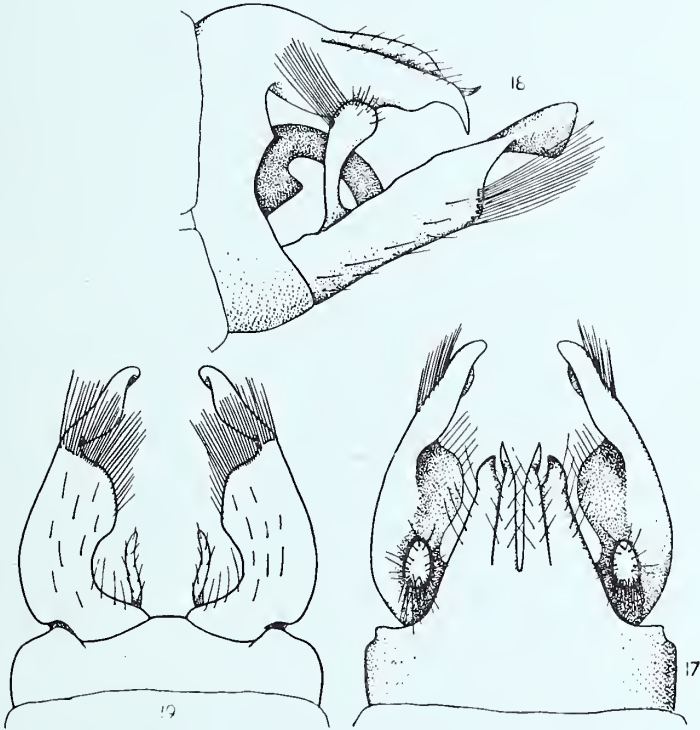
wide, rounded, horseshoe-shaped excision; margin of the ninth ventral segment produced at its centre and on each side.

Length of anterior wing, ♂ 10 mm., ♀ 9 mm.

RUWENZORI: Namwamba Valley, 4500-10,200 ft.; Mobuku Valley, 7800 ft.; Bwamba Pass, West Side, 5500-7500 ft. (*Edwards*). 39 ♂ ♀ in all.

Type ♂ in the Paris Museum, from "Monts Rouwenzori" (*Ch. Alluaud*, 1909).

This insect is readily separated from the other species of *Goerodes*, described in this paper, by the short, somewhat arched wings, with their broadened apices and dense clothing of long, silky hairs.

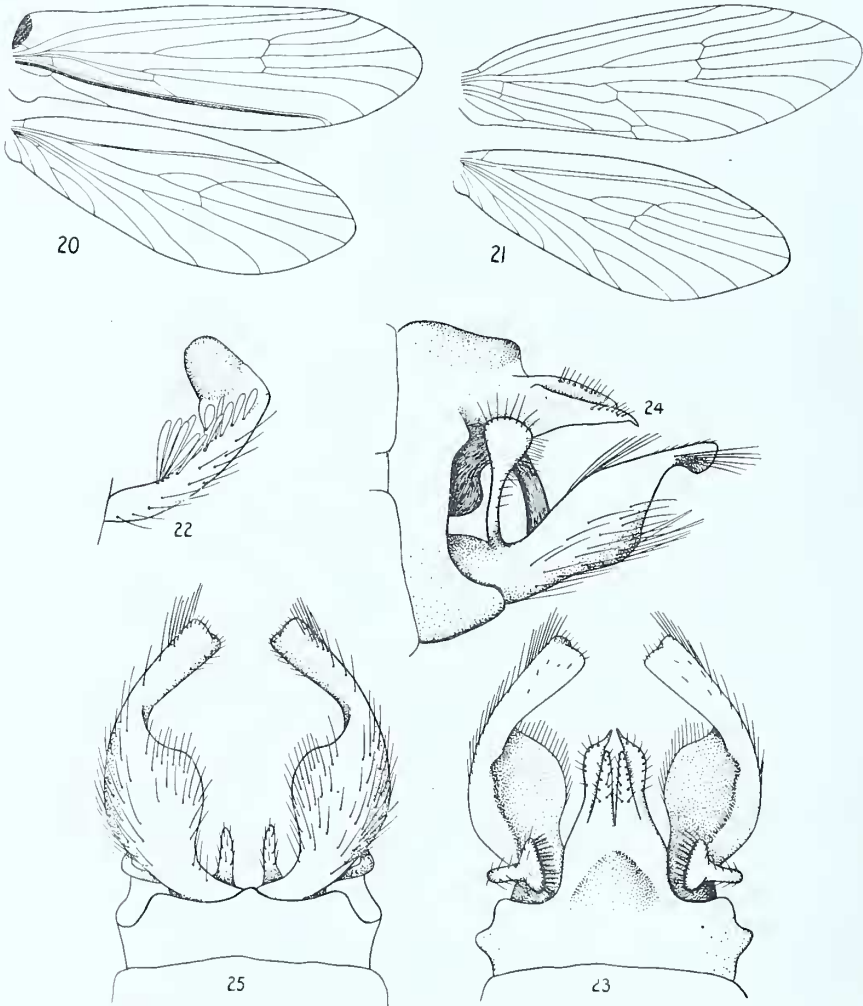


Figs. 17-19.—*Goerodes inferior* Navás ♂: 17. genitalia, dorsal, 18. lateral, 19. inferior appendages, ventral.

In addition to the series secured by Dr. Edwards, a single example has been subsequently placed in the Museum collection, taken by Miss C. Longfield on the Mobuku River, Ruwenzori, at the slightly lower altitude of 4000 ft.

Goerodes nudata Navás (Figs. 20-25)*Crunoeciella nudata* Navás, 1931, *Broteria Zool.*, 27: 134.

Head very dark fuscous, basal joint of the antenna rather longer than the breadth of the head and oculi together; two very large tufts of hairs arising



Figs. 20-25.—*Goerodes nudata* Navás: 20. wings ♂, 21. wings ♀, 22. maxillary palpus ♂, 23. genitalia ♂, dorsal, 24. lateral, 25. inferior appendages, ventral.

from the head between and behind the bases of the antennae; maxillary palpi of the ♂ possibly two-jointed, with a tuft of broad, black scales at the apex;

wings black, anterior ♂ with the costal margin doubled over at the base, enclosing a conspicuous tuft of black hairs and with a long fold extending almost to the margin (the fold is opened out in the figure); forks Nos. 1 and 2 present; wing covered with numerous black scales; discoidal cell long and narrow; posterior wing with only fork No. 1 present, thinly sprinkled with narrow, black scales; anterior wing ♀ with forks Nos. 1, 2, 3 and 5; posterior with forks Nos. 1, 2 and 5.

Genitalia ♂. Excepting for some slight variation in the proportions of the various parts, particularly in the branches of the inferior appendages, and a raised, triangular upper-part to the ninth segment, the genitalia of *nudata* are indistinguishable from those of *inferior*.

Length of anterior wing, ♂ 14 mm., ♀ 13 mm.

RUWENZORI: Namwamba Valley 4500-10,200 ft. (*Edwards*). 155 ♂ ♀ in all.

Type ♂ in the Paris Musuem from Ruwenzori, Kichouchou, 3000 m. (*Ch. Alluaud*, 1909).

CALAMOCERATIDAE

Anisocentrops usambarensis Ulmer

Anisocentropus usambarensis Ulmer, 1910, in Sjöstedt's Kilimandjaro-Meru Expd., 1905-6, 13, Neur.: 5-6.

KENYA: Thika, 4500 ft., 23.X.1934 (*Edwards*). 1 ♀.

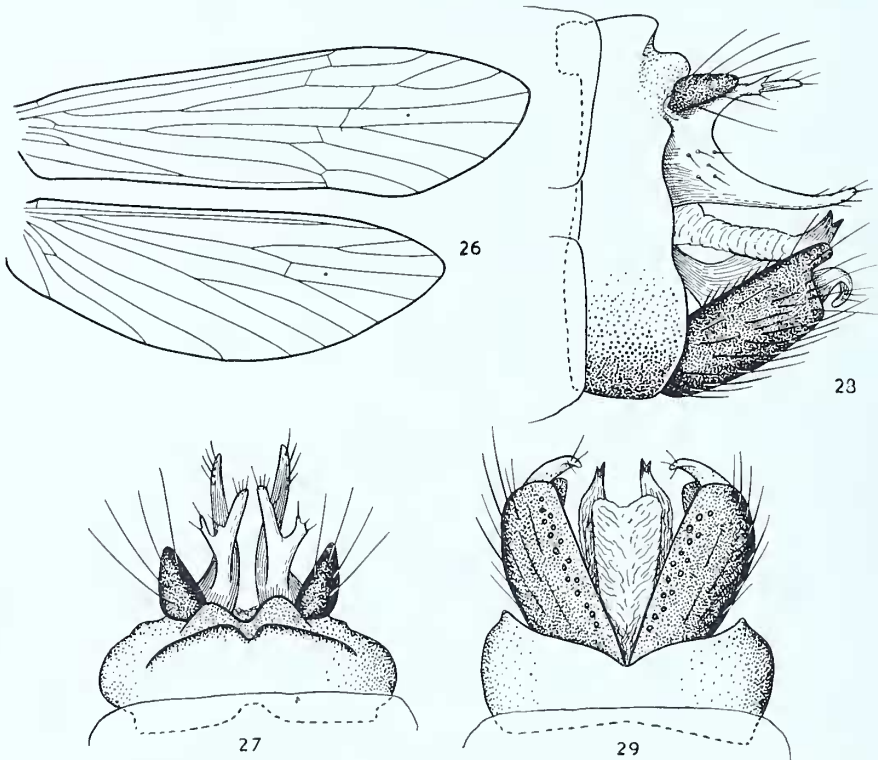
LEPTOCERIDAE

Leptocerus asanus sp. n. (Figs. 26-29)

Head black with cream-coloured hairs between the antennae; these are black with no apparent annulations; legs very dark fuscous, nearly black; wings with blackish pubescence, membrane possibly yellowish and conspicuously yellow in the apical area.

Genitalia ♂. Apical margin of the ninth dorsal segment produced and excised at its centre with a lower projecting shelf which is still more excised; superior appendages moderate in size and conical in shape; upper penis-cover in the form of a pair of strongly chitinized spines curving slightly upwards as seen from the side; arising from their upper surfaces at their bases is a pair of small, transparent and bifurcate branches, the apices of the forks generally truncate and armed with one or two bristles; there is a pair of penis-sheaths with dilated, bifurcate apices and a membranous penis; inferior appendages

with a very stout basal and branched apical portion; upper branch from the side, fuscous in colour, short and straight and forming an extension of the upper apical angle of the basal portion; second branch rather transparent,



Figs. 26-29.—*Leptocerus asanus* sp. n. ♂: 26. wings, 27. genitalia, dorsal, with superior appendages and upper penis-cover, 28. genitalia, lateral, 29. ventral, with inferior appendages, penis and sheaths.

arising at the base of the first and forming a down-curving hook; the appendages are concave, inner margin set with strong teeth, outer surface strongly fringed.

Length of the anterior wing, ♂ 9 mm.

RUWENZORI: Nyamgasani Valley, 12-13,000 ft. (Buxton). 1 ♂ (type).

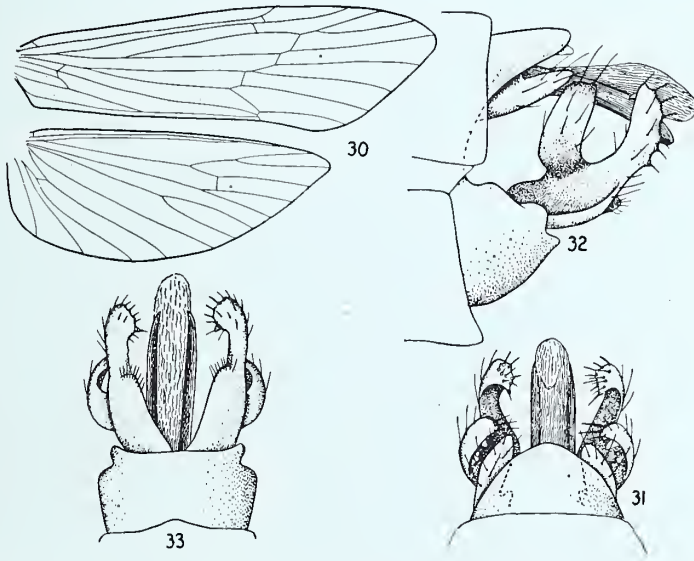
Leptocerus sp.

In the absence of a ♂, I refrain from giving a name to or a description of this insect as, in the female sex, no very definite characters are available by which closely related species may be separated.

RUWENZORI: Bwamba Pass, West Side, 5500-7500 ft. (Edwards). 3 ♀.

Leptocerina talopa sp. n. (Figs. 30-33)

Head black, clothed with cream-coloured hairs; basal joint of the antennae also clothed with cream-coloured hairs, only one or two of the other joints remaining; these appear to be clothed dorsally with white hairs as is usual in the genus; palpi fuscous; legs ochraceous with white hairs at the bases of the tarsal joints; wings uniformly dark ochraceous, clothed with short, fuscous hairs; there is no apparent white streak or white patch at the anal angle of the anterior wing as occurs in other species in the genus.



Figs. 30-33.—*Leptocerina talopa* sp. n. ♂: 30. wings, 31. genitalia, dorsal, 32. lateral, 33. ventral.

Genitalia ♂. Apical margin of the ninth dorsal segment produced in a wide triangle with a slight projection of the under surface at the apex; superior appendages narrow from the side, only partly visible from above; there is a projecting angle on the inner margin at the base, only to be seen in a cleared example; upper penis-cover divided in a pair of strongly chitinized plates or spines, arching over a membranous penis; in the type, the penis, towards its apex, seems to have been pushed up between the plates so that it appears above them; inferior appendages large, two-branched, the outer margin of the lower branch strongly serrate, the upper branch arising towards its base and directed upward and distally with a truncate and serrate apical margin; there is a

triangular projection at the lower margin about midway; the centre of the margin of the eighth sternite is slightly produced but scarcely enough to make a ventral process.

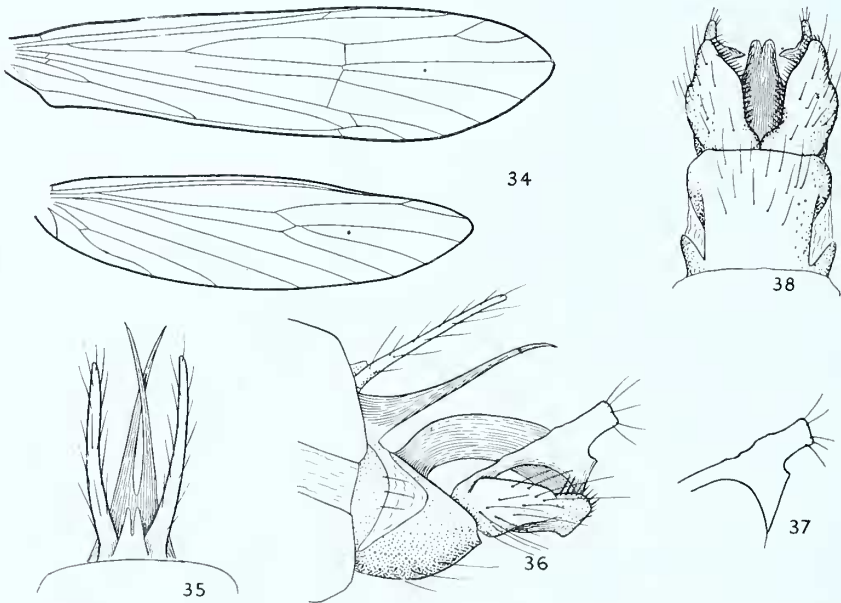
Length of anterior wing, ♂ 9 mm.

W. UGANDA: Fort Portal district, 5000 ft. (*Edwards*). 1 ♂ (type).

The species very closely resembles *L. mlanjensis* Mos. from Mt. Mlanje, Nyasaland. There are various slight differences in the form of the genitalia and also in the neuration which should suffice to separate them.

***Triaenodes legona* sp. n. (Figs. 34-38)**

Head and thorax greyish-fuscous; antennae greyish-ochraceous with no apparent annulations; wings reddish-fuscous with a few distinct, black marks on the anterior, in the post-costal region towards the base of the wing and three



Figs. 34-38.—*Triaenodes legona* sp. n. ♂: 34. wings, 35. dorsal plate, superior appendages and upper penis-cover, 36. genitalia, lateral, 37. upper branch inferior appendage, lateral, 38. genitalia, ventral.

or four round the lower apical margin; bordering on these spots, on the basal side, are patches of golden hairs; pubescence otherwise reddish; legs ochraceous.

Genitalia ♂. Apical margin of the ninth dorsal segment produced in a pair of short, parallel, finger-like processes; superior appendages very slender, rod-like

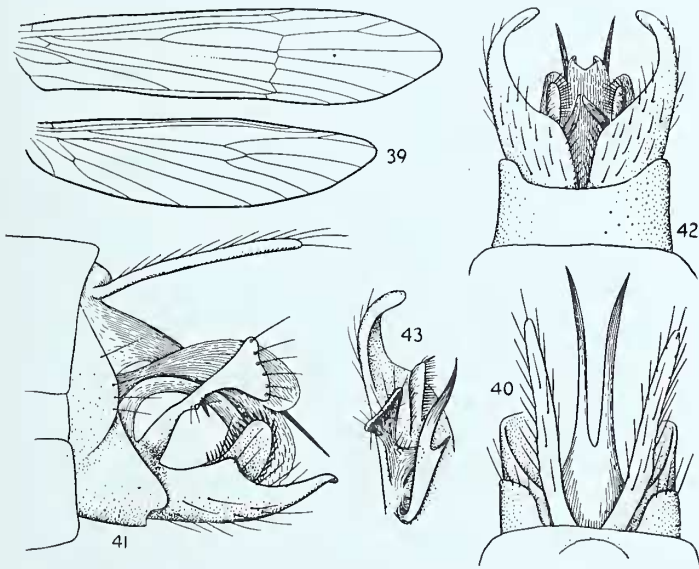
and fringed with long hairs; beneath them is an upper penis-cover composed of two long, slender spines, the apices crossing each other in the example under description; penis broad, arching downward, apex bifurcate; inferior appendages with two branches, the lower, large, bearing on its inner surface, a mass of strong teeth; the second branch arises at the base of the lower, from its upper surface; it has a slender stem and broad, furcate apex; from the side, the lower fork is directed downward with an acute apex armed with a single bristle; the upper directed backward with a truncate apex furnished with a few bristles; there is a small angular projection between the two forks; it is probable that the shape of the branches will vary slightly in individuals.

Length of anterior wing, ♂ 6 mm.

KENYA: Mt. Elgon, 10,000–11,500 ft., ii.1935 (*Edwards*). 2 ♂ (type and paratype).

***Triaenodes wambana* sp. n. (Figs. 39–43)**

Head ochraceous with cream-coloured hairs; antennae, basal joint long, ochraceous, other joints ochraceous with dark annulations; legs ochraceous;



Figs. 39–43.—*Triaenodes wambana* sp. n. ♂: 39. wings, 40. dorsal processes, 41. genitalia, lateral, 42. ventral, 43. inferior appendage from within.

wings ochraceous clothed with ochraceous hairs with here and there small patches of dark hairs, more particularly along the lower apical border.

Genitalia ♂. Superior appendages long, finger-like and fringed; beneath them is a strongly chitinized fork or pair of spines arising from a broad base

and directed somewhat downward; penis arching downward with a membranous, two-lobed apex; inferior appendages from beneath, caliper-shaped; from the side, the lower or first branch is broad at its base, the apical half with a concave upper margin so that it tapers gradually to an acute apex; at the base there arises from the upper margin a distally directed second branch with a very broad apex, the distal margin of which is sinuously truncate; arising from just above the base of this branch is a third branch in the form of a strongly chitinized, sickle-shaped spine curving downward so that its apex is nearly level with the lower margin of the first branch; this branch has a short spur about midway; the fourth branch is broad, thickly covered with long spines on its inner surface; ninth segment from beneath, strongly produced with its apical margin widely excised.

Length of anterior wing, ♂ 7 mm.

RUWENZORI: Bwamba Pass (west side), 5550-7500 ft. (*Edwards*). ♂ (type).

Triænodella hastata Ulmer

Triænodes hastata Ulmer, 1910, in Sjöstedt's Kilimandjaro-Meru Expd., 1905-6, 13, Neurop: 7-8.

RUWENZORI: Namwamba Valley, 6500 ft., 1 ♂; Fort Portal, 5000 ft., (*Edwards*) 5 ♀.

The type was described in *Triænodes*, but the presence of a plate and pencil of hairs attached to the basal joint of the antenna indicates its position in *Triænodella*.

Oecetis kathia sp. n. (Figs. 44-47)

Head pale reddish-ochraceous with similarly coloured hairs; antennae very heavily fringed in the basal half, but on one side only; palpi and legs pale ochraceous; wings cream-coloured with darker shading at the anastomosis; apex of the anterior wing unusually broad, costa considerably rounded. Spurs: 1, 2, 2.

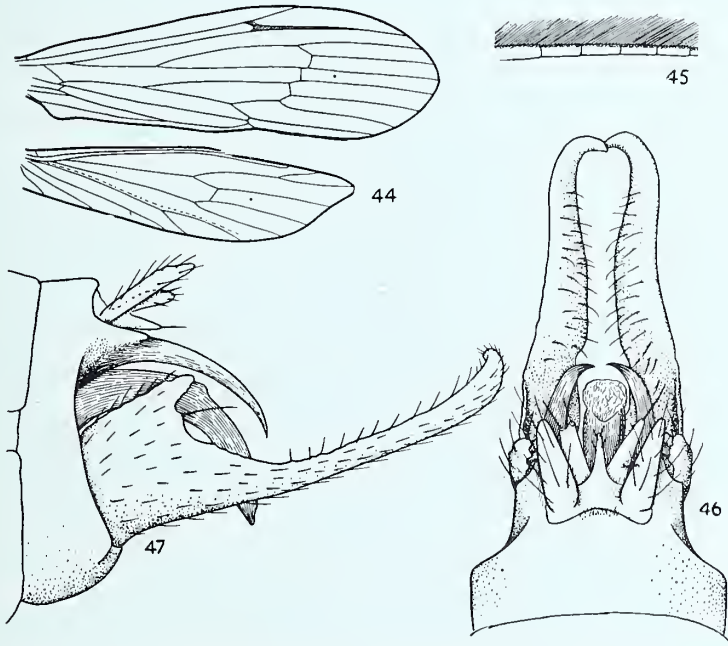
Genitalia ♂. Apical margin of the ninth tergite excised, with the centre of the excision slightly produced; there is a trifid dorsal plate, all the lobes short, the middle the shortest, outer lobes stout, central lobe slender; the ninth segment is further produced at the edges of the excision in a pair of long, down-curving, narrow plates or spines, each with a small, angular projection at its base on its outer margin; above these, there lies a pair of minute, transparent superior appendages, each with the apex armed with a long bristle; in the type, one of these appendages is aberrantly paired; these processes are so small and inconspicuous that I have only been able to make them out under a $\frac{1}{4}$ -inch microscope objective; penis strongly chitinized, arching downwards, with a

small projection at about midway along its upper margin; inferior appendages very long and sinuous towards the apices which are incurved; they arise from stout bases which bear large, rather irregular, upwardly-directed branches on their upper margins towards the base, as seen from the side.

Length of the anterior wing, ♂ 7 mm.

KENYA: Thika, 4500 ft., 23.X.1934 (*Edwards*). 4 ♂ (type and paratypes).

The species closely resembles in its genitalia *Potamoryza modesta* Barnard. The feathered antennae and details of neuration suggest that possibly a new genus should be erected to take it.



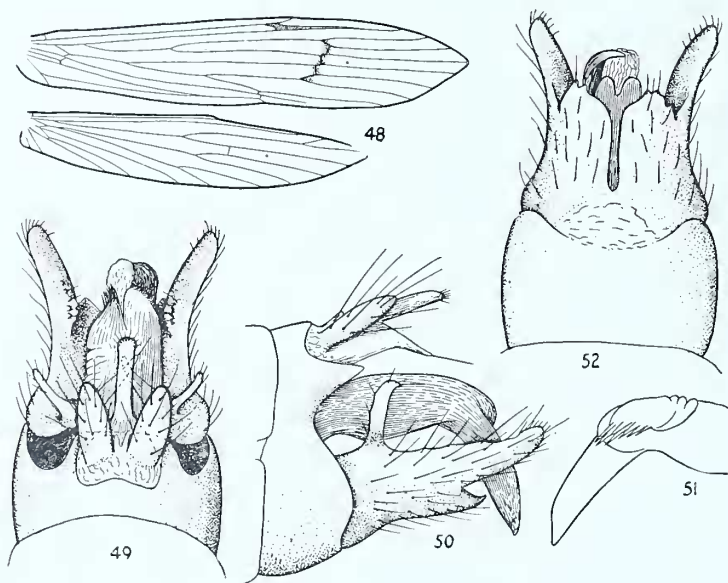
Figs. 44-47.—*Oecetis kathia* sp. n. ♂: 44. wings, 45. portion of an antenna, 46. genitalia, dorsal, 47. lateral.

Oecetis angustipennis sp. n. (Figs. 48-52)

Head and body pale ochraceous; antennae cream-colour with dark annulations; legs cream-colour; wings very narrow and translucent, anastomosis dark; Spurs ♂(?), 2, 2.

Genitalia ♂. Apical margin of the ninth dorsal segment possibly excised at its centre where there is a trifid dorsal process, the outer lobes short and shuttle-shaped, the inner, long and slender, apex rounded, almost truncate

and fringed with a few short bristles; at the base of the outer processes, between them, lies a pair of short, membranous finger-like appendages, one longer than the other; beneath the dorsal plate is a pair of superior appendages which, from the side, are broad at the base, apical parts slender and terminating each in a single bristle; these are difficult to make out from above and are crossed in the type; penis large, arching downward, asymmetric; on one side of the apex there is a broad, downwardly directed process; on the other, a short, strongly fringed



Figs. 48-52.—*Oecetis angustipennis* sp. n. ♂: 48. wings, 49. genitalia, dorsal, 50. lateral, 51. penis from the other side, 52. genitalia, ventral.

lobe; inferior appendages large, three-branched, upper branch slender, arising at the base and directed upward; central branch produced and curving slightly outward from above; third branch, from the side, appears as a small spur projecting from the lower margin of the main branch; from beneath, the third branches are broad with serrate, rounded margins.

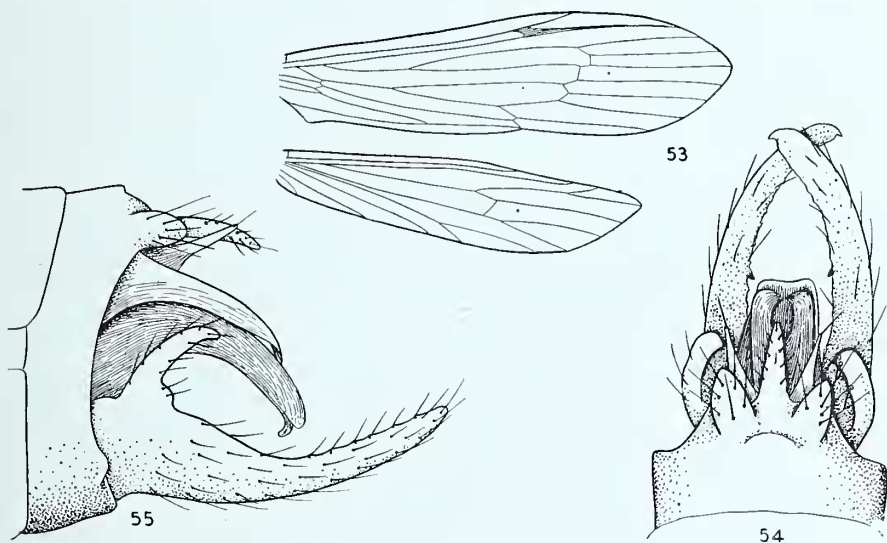
Length of the anterior wing, ♂ 7 mm.

RUWENZORI: Namwamba Valley, 6500 ft. (Edwards). 1 ♂ 1 ♀ (type and allotype).

Oecetis portalis sp. n. (Figs. 53-55)

The single example of the species is in very poor condition and lacks its antennae and most of its legs. The head and body appear to be ochraceous.

Genitalia ♂. The apical margin of the ninth tergite is produced in a trifid process of which the central lobe is much the longest and curves slightly downwards; superior appendages arise from beneath the outer lobes and are very slender, each armed at the apex with a long bristle; the upper penis-cover seems to be partly attached to the lateral margin of the ninth segment and is in the form of a pair of long, down-curving spines, flattened from above, apices



Figs. 53-55.—*Oecetis portalis* sp. n. ♂: 53. wings, 54. genitalia, dorsal, 55. lateral.

somewhat rounded but with the inner apical angles slightly produced; penis doubtful as to form; lower penis-cover trough-shaped, arching downward, terminating in an acute tooth; inferior appendages broad at the base, then very long and slender, curving inwards from above; about midway along the inner margin of the appendage is a minute angular projection; from the side, there is a slender, upwardly-directed branch arising from the upper margin near the base; the margin of the ninth sternite is produced at its centre and truncate with an excision on each side of the produced part.

Length of anterior wing, ♂ 5 mm.

UGANDA: Fort Portal district, 5000 ft. (*Edwards*). 1 ♂ (type).

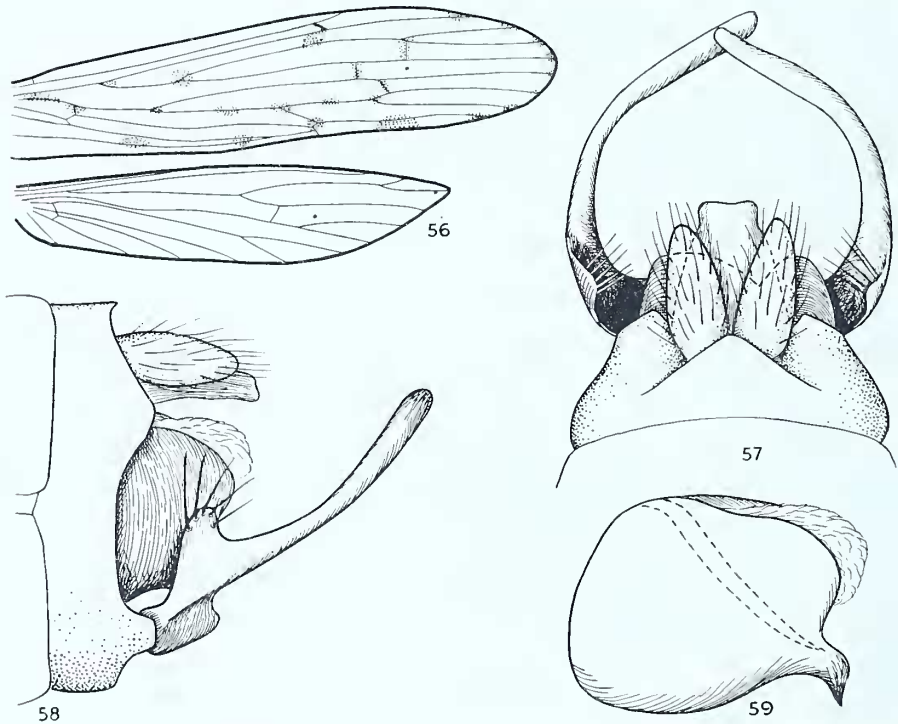
The species bears a close resemblance to *O. kathia* and to *Potamoryza modesta* Barnard, a species found in South Africa. It differs from the latter mainly in the presence of superior appendages which I cannot see in Dr. Barnard's species.

Oecetis thikanensis sp. n. (Figs. 56-59)

The example before me is in very bad condition so that I am unable to give any account of its general appearance.

Anterior wing with all the forks sessile and with various dark spots as indicated in the figure. Apex of the anterior wing rounded, of the posterior, acute.

Genitalia ♂. Apical margin of the ninth dorsal segment produced at its centre in a small triangle; beneath are two large, shuttle-shaped superior appendages;



Figs. 56-59.—*Oecetis thikanensis* sp. n. ♂: 56. wings, 57. genitalia, dorsal, 58. lateral, 59. penis, lateral.

upper penis-cover broad, apex truncate; penis immensely broad and rounded, occupying nearly the whole width of the segment; upper margin elevated in a pair of large, rounded, asymmetric lobes, side by side, the whole arching downwards with a broad lip at the apex; inferior appendages long, slender and caliper-shaped with a strong angular projection on the upper margin towards the base.

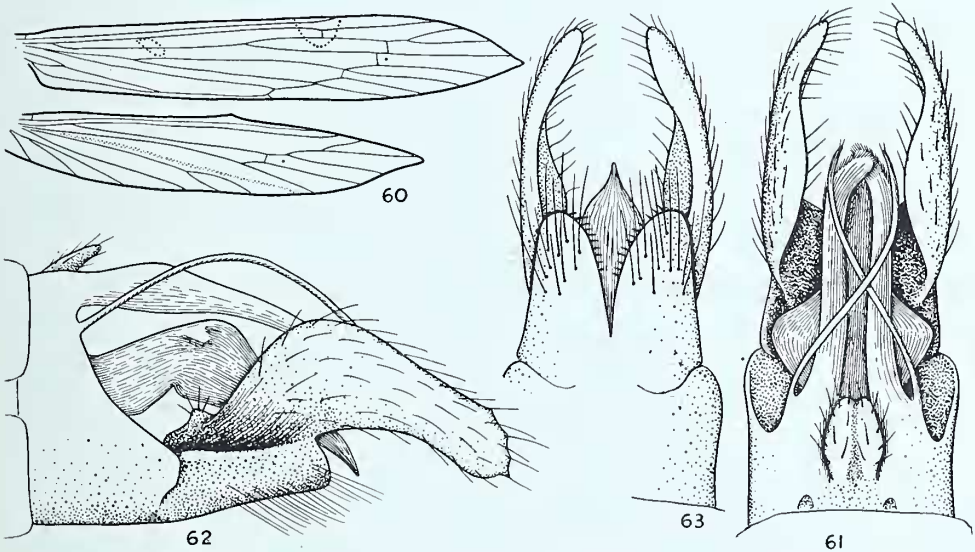
Length of anterior wing, ♂ 6.5 mm.

KENYA: Thika, 4500 ft., 23.X.1934 (*Edwards*). 1 ♂ (type).

***Setodes intricata* sp. n.** (Figs. 60-63)

Head black with a clothing of black hairs; antennae, basal joint bulbous with a few silvery hairs on its sides; remaining joints dark chocolate with white annulations disappearing towards the apex; legs ochraceous; anterior wings deep fuscous with two well-indicated patches of white hairs, one large and round, sometimes divided, extending to the costa near the apex, the other, short and oblique towards the centre of the wing nearer the base; there are also a few patches of short golden hairs in various parts of the wings.

Genitalia ♂. Apical margin of the eighth dorsal segment straight; at the



Figs. 60-63.—*Setodes intricata* sp. n. ♂: 60. wings, 61. genitalia, dorsal, 62. lateral, 63. ventral.

centre of the apical margin of the ninth tergite there is a small dorsal plate which has the appearance of a pair of shuttle-shaped, brownish lobes, welded together and leaving an excised apical margin; at the base of the plate on each side is a minute, brownish spot, possibly an indentation of the segment; beneath the plate, the apical margin of the segment is produced in two very long, finger-shaped processes, apices curving slightly inward with their outer margins heavily fringed, particularly towards the apices; from the margin of the segment arise two long, slender spines which in the example under description cross above the dorsal processes; penis large, elbowed downward, base very stout and broad both from the side and from above; inferior appendages very large, apical portions produced from somewhat oval bases which, from beneath, slightly overlap them; inner margins of the basal part set with strong teeth;

there is a slight triangular projection on the upper margin near the base, as seen from the side.

Length of anterior wing, ♂ 6 mm.

UGANDA: Fort Portal, Nyakasura, 4.xii.1934 (*Edwards*). 4 ♂ (type and paratypes).

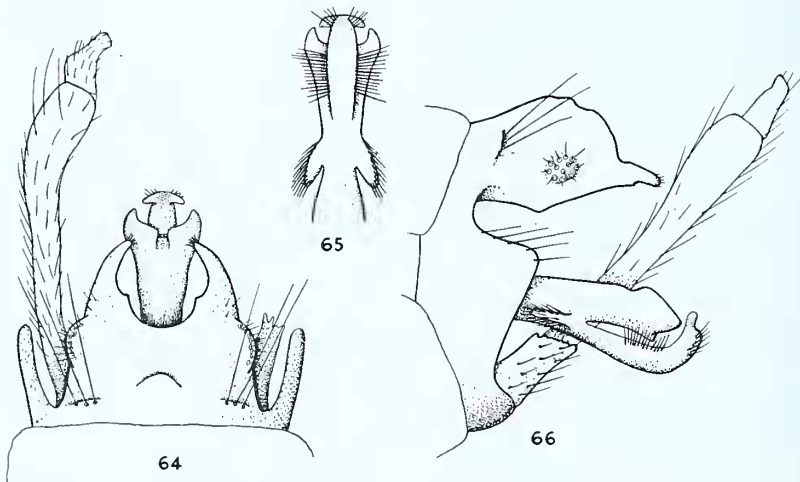
This species is very closely allied to *Setodes didymata*, described by Dr. K. H. Barnard from South West Africa. It differs in the shape of the dorsal plate and also in the form of the processes arising from the ninth dorsal segment.

HYDROPSYCHIDAE

Hydropsyche propinqua Ulmer (Figs. 64-66)

Hydropsyche propinqua Ulmer, 1907, Notes Leyd. Mus., 29: 21, fig. 32-33.

Head ochraceous with ochraceous hairs; oculi black; antennae ochraceous with dark annulations which extend across the joints to give a suggestion of diagonal streaks; maxillary palpi with the basal joint short, second twice as



Figs. 64-66.—*Hydropsyche propinqua* Ulmer ♂: 64. genitalia, dorsal, 65. penis, ventral, 66. genitalia, lateral.

long as the first and not quite as long as the third and fourth together; these are approximately equal, fifth as long as the second, third and fourth together; legs ochraceous; wings hyaline with yellowish irrorations.

Genitalia ♂. Ninth segment with acute sidepieces and a raised upper part; there is a dorsal plate produced in two caliper-like processes separated from

each other by a nearly circular excision; small, angular projections about half-way along the inner margins, slightly nearer the base; from above, there are two rounded and fringed warts situated at the sides and projecting slightly beyond the lateral margins; from the side, the plate is very broad at the base with a rounded and sinuous upper margin, the caliper-shaped process appearing as an extended finger with a barely indicated notch on the under side; penis with a branch arising from its under surface; this branch, about midway, carries brush-like bunches of hairs on each side; the apex is fringed and bifurcate, with the two forks curving upward and slightly outward beyond the apex of the main stem; at the origin of this lower branch are two short, fringed side-branches, directed towards the base; the apex of the main stem is much dilated and bifurcate, the forks diverging, with a narrow excision between them at the base and with widely excised upper margins and acute outer angles; inferior appendages two-jointed, basal joint dilated at its apex, terminal joint very short and, from above, bent over to show an obtuse angle on the outer margin; apex of the joint truncate.

Length of anterior wing, ♂ 8 mm.

Type ♂, with one inferior appendage wanting, is in the Berlin Museum and is labelled N. Kamerun.

Through the courtesy of Dr. H. Bischoff, I have been able to give the above description and figures of this species.

The species collected by Dr. Edwards so closely resemble *H. propinqua* that it is only in minor points of detail that they are to be separated.

Hydropsyche namwa sp. n. (Figs. 67-71)

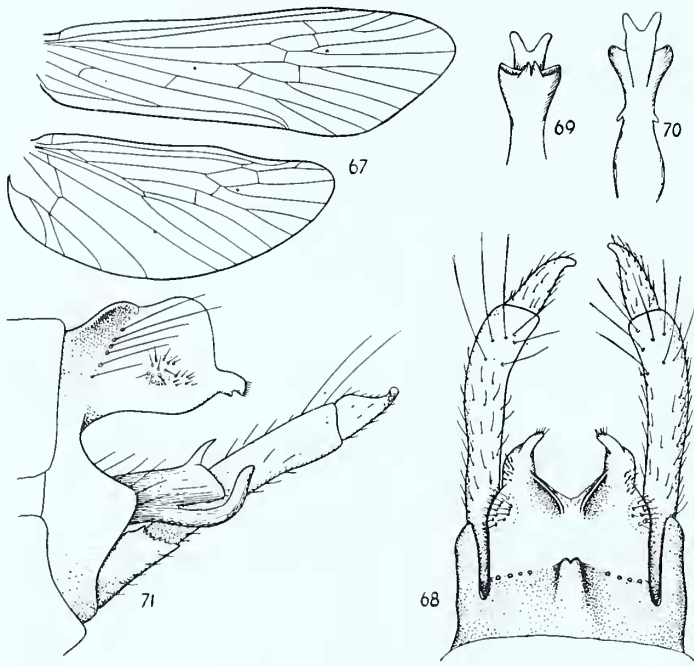
Head dark ochraceous; oculi black; antennae ochraceous with slightly darker annulations; maxillary palpi, basal joint short, second rather long, longer than the third which is longer than the fourth, fifth equal to the third and fourth together; wings yellowish with numerous pale yellow irrorations and blotches.

Genitalia ♂. Ninth segment: there is a raised upper part, narrowing to a bilobed apex, lobes small and rounded; side-pieces produced in wide angles; the segment is produced in a large dorsal plate, the sides of which are widely separate in the apical part; from the side, the upper margin is dome-like with the lower apical angle produced in a tailwardly directed finger with a well-defined notch on its lower margin; there is a rounded and fringed wart on each side; penis with a branch arising from its under surface; this branch is bifurcate at its apex, from the side, bending upward beyond the apex of the main stem; at the origin of the lower branch are two minute transparent warts or processes; the apex of the main stem terminates in a truncate apex, the upper margin

produced in two tailwardly and upwardly directed prongs; inferior appendages two-jointed, from the side, terminal joint very short and broad, abruptly narrowing to a sub-acute apex.

Length of anterior wing, ♂ 11 mm., ♀ 14 mm.

RUWENZORI: Namwamba Valley, 4500-10,200 ft. (Edwards). 40 ♂ ♀ (including type ♂).



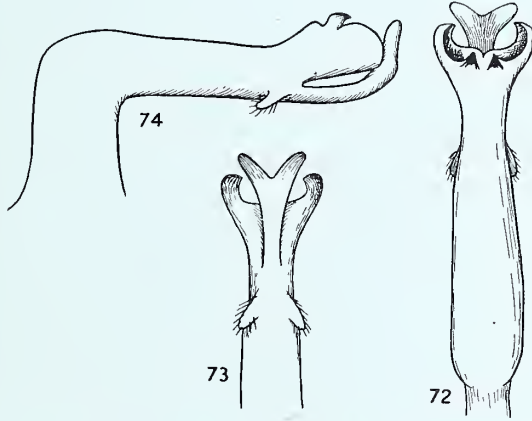
Figs. 67-71.—*Hydropsyche namwa* sp. n. ♂: 67. wings, 68. genitalia, dorsal, 69. penis, dorsal, 70. ventral, 71. genitalia, lateral.

Hydropsyche bwambana sp. n. (Figs. 72-74)

General appearance of the insect, ochraceous; anterior wings light ochraceous with darker transverse bands.

Genitalia ♂. Apical margin of the ninth segment produced at its centre in a large, excised plate, the excision being deep and rounded; the upper part of the plate appears as two parallel lobes welded together, each with a distinct rounded apex; from the side, the plate is directed downwards, apex bifurcate,

upper fork broader than the lower; there is a rounded wart fringed with short hairs on each side of the plate; penis with the usual ventral fork common to the African species in the genus; stem constricted before the apex which is widely dilated in two curving wings; on the upper surface, at the centre of the excision



Figs. 72-74.—*Hydropsyche bwambana* sp. n. ♂:
72. penis, dorsal, 73. ventral, 74. lateral.

formed by the two wings, is a pair of small, distally directed, triangular processes; on each side of the base of the ventral fork is a minute, basally directed plate, fringed with short hairs.

Length of anterior wing, ♂ 10 mm., ♀ 12 mm.

RUWENZORI: Bwamba Pass (west side), 5500-7500 ft.; Kilembe, 4500 ft. (*Edwards*). 24 ♂ ♀ (including type ♂).

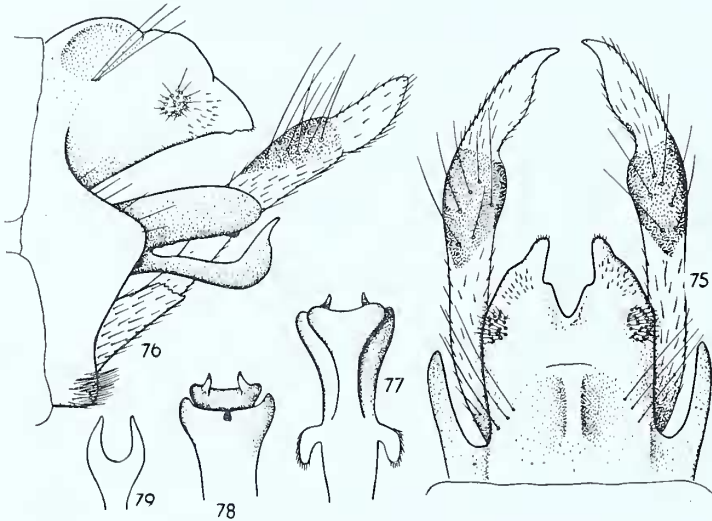
This species, in its genitalia, closely resembles *H. namwa*, differing mainly in details of the penis.

***Hydropsyche wamba* sp. n. (Figs. 75-79)**

Head dark ochraceous, with a pair of still darker warts at the hind margin; oculi black; antennae pale ochraceous, with darker annulations which extend across the joints to give a suggestion of diagonal streaks; maxillary palpi, basal joint short, about half the length of the second which is slightly longer than the equal third and fourth joints, the second, third and fourth joints are together slightly longer than the fifth; wings yellowish-fuscous with plentiful yellowish irrorations after the usual *Hydropsyche* pattern.

Genitalia ♂. Ninth segment: there is a raised upper part, narrowing to a truncate apex; side-pieces strongly produced, apices rounded; the segment

is produced in a very broad, bifurcate dorsal plate, each fork terminating in a blunt finger as seen from above, the excision between being nearly square towards the apex, the lower side of the square being extended in a deep V; from the side, the plate forms a broad triangle, shaped somewhat like the head of a bird, the eye being indicated by a hairy wart; penis with a branch arising from its under surface; this branch is bifurcate at its apex, the forks being long and slender and with a U-shaped excision between; the apex of the branch is



Figs. 75-79.—*Hydropsyche wamba* sp. n. ♂: 75. genitalia, dorsal, 76. lateral, 77. penis, ventral, 78. dorsal, 79. apex of ventral fork of the penis.

bent up towards the apex of the main stem; at the origin of the lower branch are two rather stout, fringed side-branches, hooked sharply backward; the apex of the main stem from above is widely dilated with the apical margin slightly concave, a small excision at the centre, the outer angles produced in short pointed processes; inferior appendages two-jointed, basal joint dilated at its apex where there is a darkly pigmented area; terminal joint very broad from the side, short and sinuous from above, apex acute, fused to the lower branch at its upper basal margin.

Length of anterior wing, ♂ 12 mm., ♀ 18 mm.

RUWENZORI: Bwamba Pass (west side), 5500-7500 ft. and Namwamba Valley, 4500-6500 ft. (*Edwards*); Nyamgasani Valley, 6400 ft. (*Buxton*). 37 ♂ ♀ in all (including type ♂).

Hydropsychodes Ulmer (Fig. 80)

Hydropsychodes Ulmer, 1905, Ann. Soc. Ent. Belg., 49: 34-35, fig. 22.

Dr. Ulmer (*in litt.*, 29.xi.1935) informs me that in *H. albomaculata*, the median cell of the anterior wing is open and he kindly sent me a paratype of the species which has enabled me to confirm the fact. I am re-figuring the anterior wing here and to prevent any further confusion, I here designate *albomaculata* as the genotype of *Hydropsychodes*.

Numerous African and Eastern species which have been placed in *Hydropsychodes*, will have to be transferred to other genera; the smaller insects with

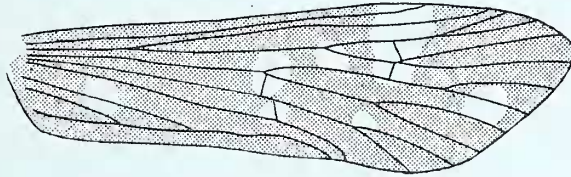


Fig. 80.—*Hydropsychodes albomaculata* Ulmer ♂, anterior wing.

brownish, irrorated anterior wings can probably all be placed in *Cheumatopsyche* Wallengren.

It is advisable to deal with the position here as, in Dr. Edwards's collection are two female flies, the one taken at Kilembe, 4500 ft., 17.xii.1935, and the other in Mpanga Forest, Fort Portal, 4000 ft., 24.i.1935, which would, on the mistaken understanding of the genus, have been placed in *Hydropsychodes*.

In the absence of the male, I prefer to leave these two insects unnamed. They resemble in outward appearance, "*Hydropsychodes*" *sexfasciata*, but the white markings which in that species extend to the membrane itself, are here indicated by patches of white hairs and the membrane itself is almost unmarked. It is necessary to transfer the following species, represented in the British Museum collection, from *Hydropsychodes* to *Cheumatopsyche*:

- afra* Mosely, 1935, Ann. Mag. Nat. Hist., (10) 15: 229-230.
- bimaculata* Ulmer, 1930, Ann. Mag. Nat. Hist., (10) 6: 491.
- chinensis* Mart., 1930, Proc. Zool. Soc. Lond., No. 6: 80.
- clavalis* Mart., 1930, Proc. Zool. Soc. Lond., No. 6: 82.
- diminuta* Walker, 1852, Cat. Neur. Brit. Mus.: 115.
- excisa* Ulmer, 1930, Treubia, 11: 395.
- falcifera* Ulmer, 1930, Ann. Mag. Nat. Hist., (10) 6: 482.
- lateralis* Barnard, 1934, Trans. R. Soc. S. Afr., 21: 362-364.
- lesnei* Mosely, 1932, Mem. Est. Mus. Zool. Univ. Coimbra, 1: 64.
- maculata* Mosely, 1934, Eos, 9: 22-24.
- marmorata* Navás, 1922, Konowia, 1: 38.
- obscurata* Ulmer, 1930, Ann. Mag. Nat. Hist., (10) 6: 485.
- plutonis* Banks, 1913, Trans. Amer. Ent. Soc., 39: 239.
- sordida* Hagen, 1861, Syn. Neur. N. Amer.: 290.
- thomasseti* Ulmer, 1931, Deuts. ent. Zeit., 1931: 18-19.
- triangularis* Ulmer, 1931, Deuts. ent. Zeit., 1931: 19-20.
- trifida* Mosely, 1935, Ann. Mag. Nat. Hist., (10) 15: 228.
- zulwensis* Barnard, 1934, Trans. R. Soc. S. Afr., 21: 360-362.

Cheumatopsyche trifida Mosely

RUWENZORI: Bwamba Pass (west side), 5500-7500 ft. (*Edwards*). 1 ♂ 1 ♀.
Type in the British Museum from Katanga, Belgian Congo.

Diplectronella afra Mosely

Diplectronella afra Mosely, 1931, Ann. Mag. Nat. Hist., (10) 8: 202-205.

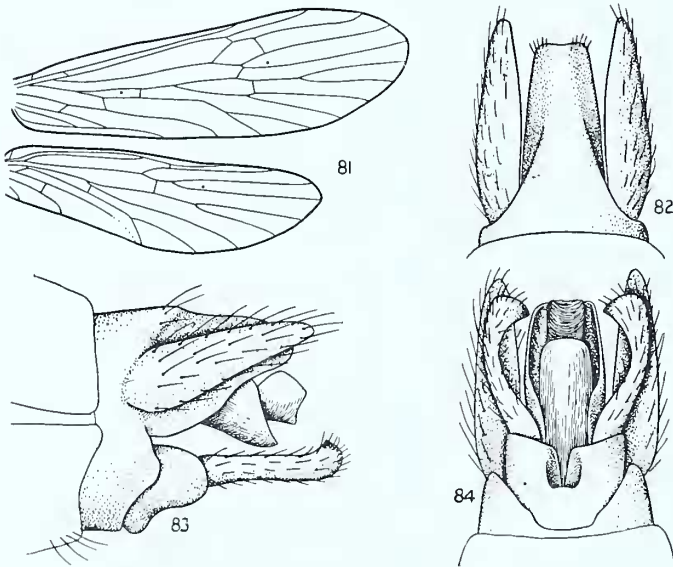
RUWENZORI: Kilembe, 4500 ft., 17.xii.1935 (*Edwards*). 1 ♂.

The type of the species was also taken in Uganda.

PSYCHOMYIDAE

Lype afra sp. n. (Figs. 81-84)

THERE is nothing in the general appearance of this insect to distinguish it from the European species of *Lype*.



Figs. 81-84.—*Lype afra* sp. n. ♂: 81. wings, 82. genitalia, dorsal, 83. lateral, 84. ventral.

Genitalia ♂. Terminal dorsal segment produced in a large plate tapering to a truncate apex, from above; very deep from the side; on each side is a large, tapering superior appendage, slightly longer than the plate; penis,

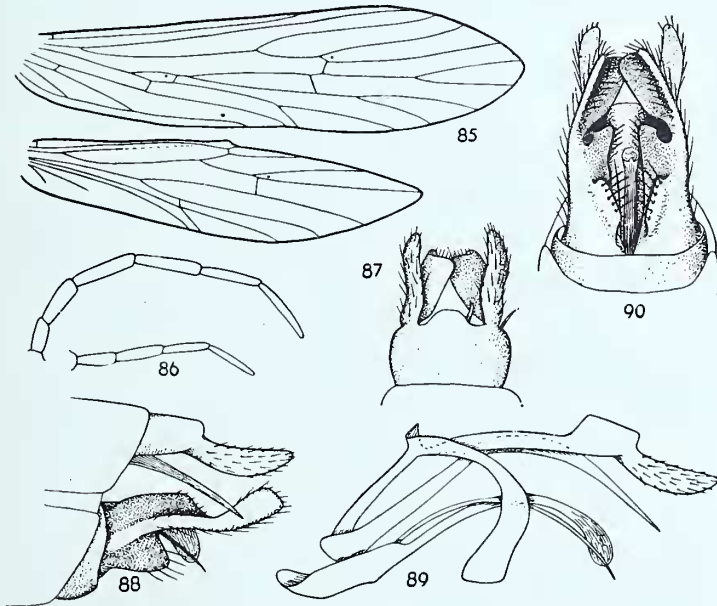
as is usual in the genus, with an upper process which is dilated at its apex with a broad hump, towards its base, corresponding to the spine in the European species *phacopa* and *reducta*; inferior appendages two-jointed, basal joint broad and short, about half the length of the apical joint which terminates in a clavate, inturned apex; margin of the ninth sternite widely excised.

Length of anterior wing, ♂ 5.5 mm.

RUWENZORI: Namwamba Valley, 6500 ft. (*Edwards*). 1 ♂ (type).

***Paduniella ankya* sp. n.** (Figs. 85-90)

Head dark ochraceous; antennae black and stout; palpi, maxillary, six-jointed; labial, four-jointed; legs, anterior, femora ochraceous, tibia ochraceous inside, fuscous outside; median, ochraceous excepting the tarsi which are



Figs. 85-90.—*Paduniella ankya* sp. n. ♂: 85. wings, 86. palpi, 87. genitalia, dorsal, 88. lateral, 89. internal structure, lateral, 90. genitalia, ventral.

fuscous; posterior, femora ochraceous, tibiae and tarsi fuscous; spurs fuscous, 2, 4, 4; wings black; discoidal cell of the anterior wings open.

Genitalia ♂. Apical margin of the eighth dorsal segment straight; ninth produced at its centre in a blunt triangle with a truncate apex; from the apical

margin of this segment, there proceeds a pair of long, finger-like processes simulating superior appendages but apparently pertaining to the ninth dorsal segment; they form, in fact, a widely divided dorsal plate; beneath this plate and covering a slender, arched penis, is a pair of long, curved spines, forming an upper penis-cover; the penis itself is accompanied by a single fine sheath or duct; inferior appendages with two branches, the outer long, slender and sinuous with a slightly dilated and hood-shaped apex, the lower margin slightly turned under, the inner arising midway, short, with a truncate apex and projecting outer angle; on the lower margin, towards the base (the inner margin from beneath), is a large triangular keel fringed with four or five strong bristles.

In *P. africana*, the base of the penis and its complicated structures extend back as far as the fifth segment; in *ankyra*, they extend back only to the seventh.

Length of anterior wing, ♂ 4.5 mm.

RUWENZORI: Namwamba Valley, Kyanjoki, 6500 ft., 3-4.i.1935 (*Edwards*).
1 ♂ (type).

PHILOPOTAMIDAE

Dolophilus kyanus sp. n. (Figs. 91-94)

Head ochraceous; oculi black, antennae ochraceous with no evident annulations; palpi and legs ochraceous excepting the tibiae and tarsi of the posterior pair which are light fuscous; wings fuscous.

Genitalia ♂. The dorsal margin of the ninth segment is produced at its centre in a triangular process with a very long produced apex; on each side of it is a long and slender superior appendage; penis long, straight, bearing a fine spine beneath; inferior appendages two-jointed, basal joint long with the apex obliquely truncate; the second joint arises from the extreme outer angle and is densely fringed with long, fine hairs; it has an enormously dilated and thickened apex the distal surface of which is slightly rounded and bears numerous parallel ridges fringed with short hairs; ninth sternite considerably produced and excised at the centre of its apical margin to leave two rounded lobes fringed with long bristles.

Length of anterior wing, ♂ 6 mm.

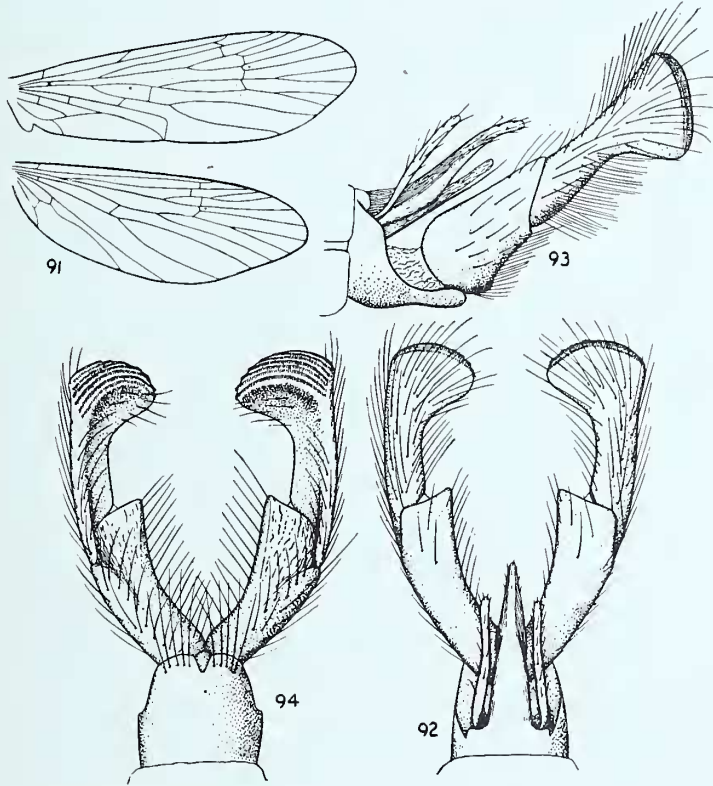
RUWENZORI: Namwamba Valley, 6500 ft. (*Edwards*). 1 ♂ (type).

Chimarrha Leach

Of the genus *Chimarrha* there are three species represented in the collection, one of them unfortunately by only a single ♀ which has been left unnamed. The other two are particularly striking insects, *clara* having uniformly pale wings, and *zoria*, jet black, each wing bearing a large, white, round spot.

Chimarrha sp.

Included in the collection is a female *Chimarrha* species, entirely black in colour with a long, slender ovipositor. It is possible that this insect may be



Figs. 91-94.—*Dolophilus kyanus* sp. n. ♂: 91. wings, 92. genitalia, dorsal, 93. lateral, 94. ventral.

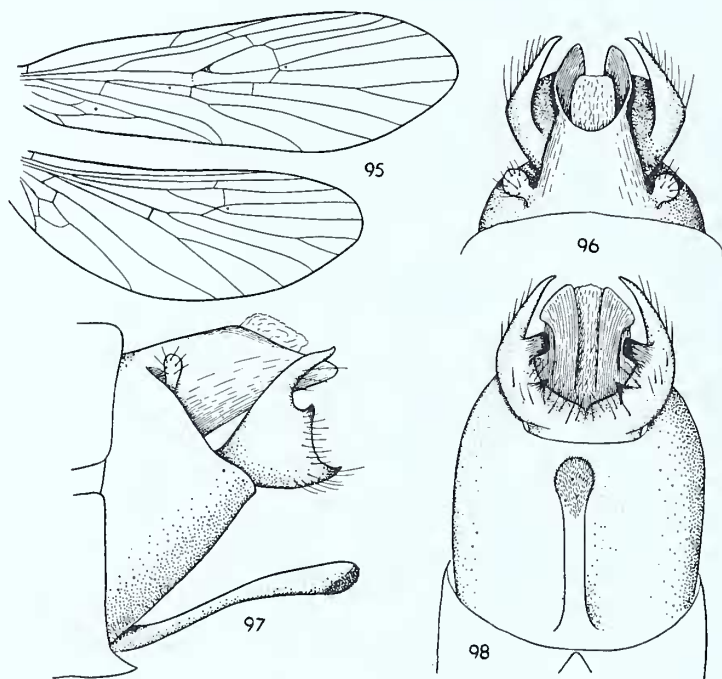
new to science. It is not advisable to describe new species from the female sex and accordingly, I leave this insect unnamed. It is labelled Bwamba Pass (west side), 5500-7500 ft. (*Edwards*).

Chimarrha clara sp. n. (Figs. 95-98)

Head bright yellow; antennae black excepting the basal joint, which is bright yellow; palpi fuscous; legs yellowish excepting the tibiae and tarsi of the anterior pair, which are fuscous; abdomen yellowish, inclined to fuscous above; wings pale cream with very short, yellow pubescence; both with fuscous or

nearly black, narrow fringes; the posterior wing is unusual in having no fork No. 1; as all the other characters pertain to *Chimarrha*, the species must be regarded as exceptional.

Genitalia ♂. All the genital parts are yellow; apical margin of the ninth dorsal segment produced at its centre in a tubular sheath with the apex obliquely truncate as in *zoria*; on each side is a small superior appendage with a dilated,



Figs. 95-98.—*Chimarrha clara* sp. n. ♂: 95. wings, 96. genitalia, dorsal, 97. lateral, 98. ventral.

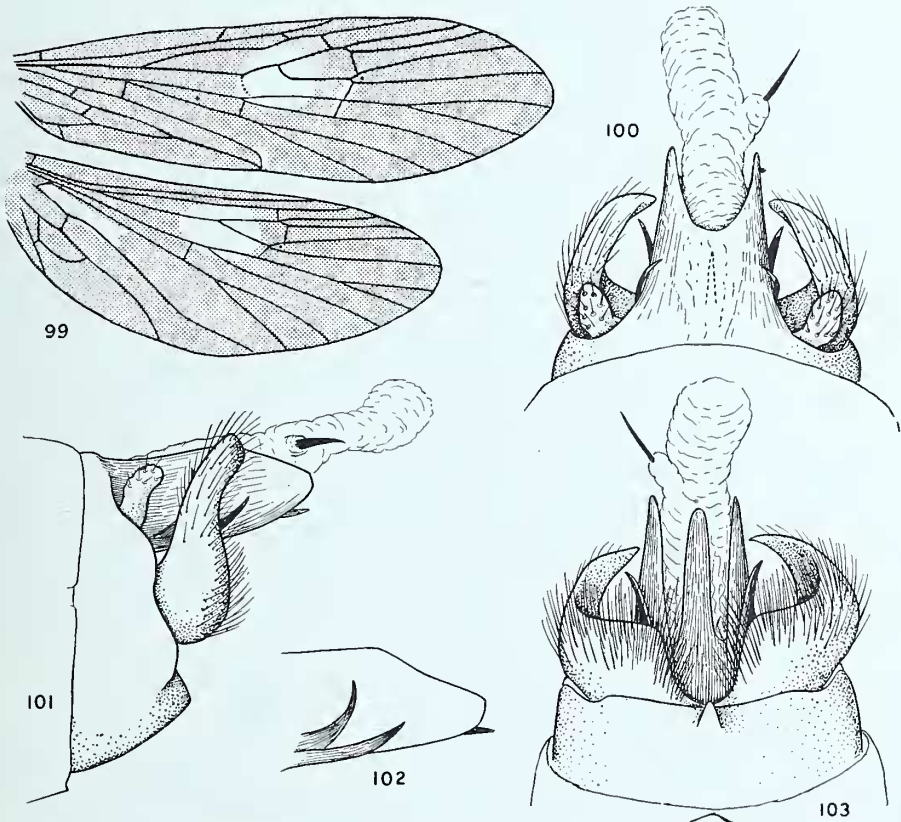
clavate apex; penis membranous, furnished with two long, fine, deep black spines lying parallel along the penis, the one longer and originating nearer the base than the other; penis-sheaths wanting; lower penis-cover wanting; inferior appendages broad at the base, trifurcate; from the side, upper fork produced and slender, middle fork short, blackened and inturned, somewhat rectangular, lower fork short and triangular, also slightly inturned, a long, sinuous process to the ninth ventral segment, apex from the side, clavate, with its lower surface furnished with a mass of short, black setae; a short, wide process to the eighth ventral segment.

Length of anterior wing, ♂ and ♀ 9 mm.

RUWENZORI: Kilembe, 4500 ft., 17.xii.1935; Bwamba Pass (west side), 7000 ft., 28-29.i.1935 (*Edwards*). 3 ♂ 1 ♀ (including type ♂).

Chimarrha zoria sp. n. (Figs. 99-103)

Head, thorax and abdomen yellowish-orange; antennae black excepting the basal joint which is yellowish-orange; palpi yellowish-fuscous; legs, all the



Figs. 99-103.—*Chimarrha zoria* sp. n. ♂: 99, wings, 100, genitalia, dorsal, 101, lateral, 102, penis and sheaths lateral, 103, genitalia, ventral.

femora yellow, tibiae and tarsi of the fore and median legs yellowish-fuscous, of the hind legs, dark fuscous. Both anterior and posterior wings black, each with a round white spot towards the centre, the veins at the centre of the spot of the anterior wing, tinged with yellow.

Genitalia ♂. Margin of the ninth dorsal segment produced at its centre in a tubular sheath or dorsal process with the apex obliquely truncate and open above, deeply excised beneath; through this tubular sheath projects a membranous penis furnished with two black spines, one situated dorsally at the base and the second towards the apex which is dilated and bears a small membranous branch, on which this spine is seated; on each side of the dorsal process is a small superior appendage with a rounded, dilated apex; there is a long, slender, blade-like lower penis-cover and a pair of slender, divergent and bifurcate sheaths, the upper fork very slender, curving upward, the lower slightly stouter and longer and with a blackened apex; inferior appendages from beneath, with broad bases and caliper-like apices; these are directed upward so that the apices are level with the dorsal process; there is a small, keel-like process to the ninth ventral segment and a smaller one to the eighth.

Length of anterior wing, ♂ 8 mm.

RUWENZORI: Namwamba Valley, 6500 ft. (*Edwards*). 15 ♂ (including type).

RHYACOPHILIDAE

Afragapetus gen. n.

This genus is closely allied to *Pseudagapetus* McLachlan and *Myspoleo* Barnard. The main points of difference lie in the spurs which are 2, 4, 3, the upper spur of the hind tibia being abnormally stout and curved in the ♂, normal in the ♀, the slightly dilated median leg of the ♀ and the absence of ventral processes in both sexes.

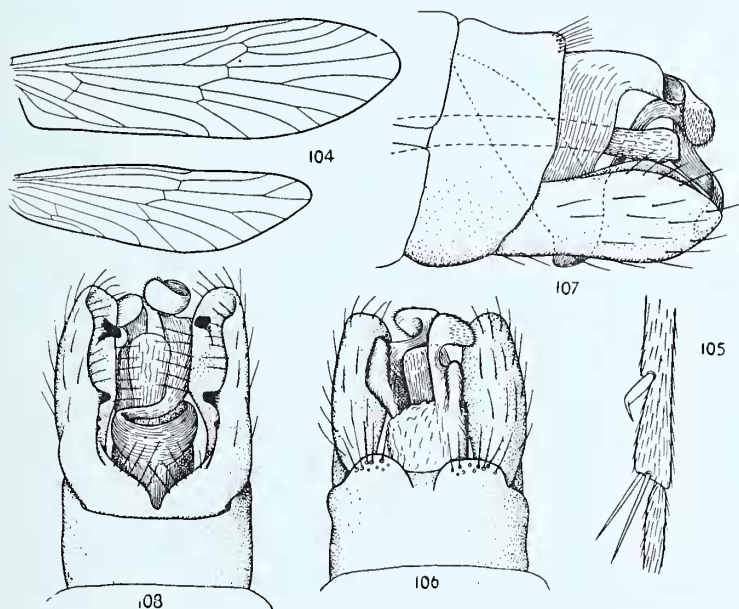
Genotype: *Afragapetus ungulatus* sp. n.

Afragapetus ungulatus sp. n. (Figs. 104-108)

Head black with a clothing of golden hairs; antennae dark fuscous excepting the terminal seven joints which are snowy white; legs and palpi yellowish; wings dark brown, densely clothed with golden hairs.

Genitalia ♂. Apical margin of the ninth dorsal segment excised; there is a pair of membranous processes in the excision with strongly chitinized plates at their extremities, one arising from the upper margin of the lower penis-cover and twisting upwards round the penis, the other apparently arising from the under margin of the terminal dorsal segment; penis retracted, its form obscure; lower penis-cover very strongly chitinized, in the form of a blackened and slightly downwardly directed trough or lip; inferior appendages large, oval, each with

a black tooth on its concave inner surface towards the apex and a pair, side by side, towards the base; no ventral process.



Figs. 104-108.—*Afragapetus ungulatus* sp. n. ♂: 104, wings, 105, abnormal spur of the ♂ posterior leg, 106, genitalia, dorsal, 107, lateral, 108, ventral.

Length of anterior wing, ♂ 4 mm., ♀ 4.5 mm.

RUWENZORI: Namwamba Valley, 6500-10,200 ft. (*Edwards*); Namgasani Valley, 8-9000 ft. (*Buxton*). 3 ♂ 2 ♀ (including type ♂).

HYDROPTILIDAE

Afritrichia gen. n.

Antennae broken in the type; ocelli present; spurs 1, 2, 4; neuration fairly complete as indicated in the figure.

The genus has some affinity with the European *Stactobia*.

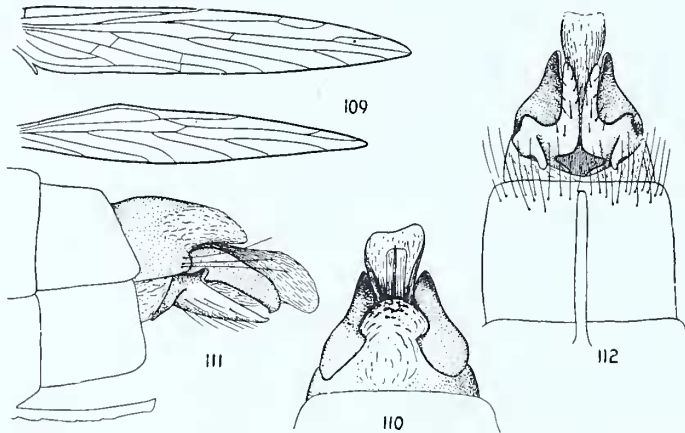
Genotype: *Afritrichia aurea* sp. n.

Afritrichia aurea sp. n. (Figs. 109-112)

Head with a tuft of golden hairs between the deep black oculi; antennae black; anterior wing covered with dense, golden pubescence without any

conspicuous markings though the costal area and the apex of the wing are inclined to fuscous; legs pale honey-colour.

Genitalia ♂. Apical margin of the terminal dorsal segment produced in a heart-shaped, membranous plate beneath and beyond which may be seen a straight penis and a large, trough-like lower penis-cover, the apex considerably dilated; on each side of the penis and its cover, from above, is a large, triangular



Figs. 109-112.—*Afritrichia aurea* sp. n. ♂: 109. wings, 110. genitalia, dorsal, 111. lateral, 112. ventral.

process; seen from the side, with a downwardly hooked apex; inferior appendages arise from large, somewhat rectangular bases, the inner, apical angles being produced in long fingers, slightly diverging towards their apices; from the lower, basal, outer angle is a short, twisted downturned branch; a long process to the seventh ventral segment.

Length of the anterior wing, ♂ 2.5 mm.

RUWENZORI: Namwamba Valley, 6500 ft. (*Edwards*). 1 ♂ (type), several ♀.

Ugandatrichia gen. n.

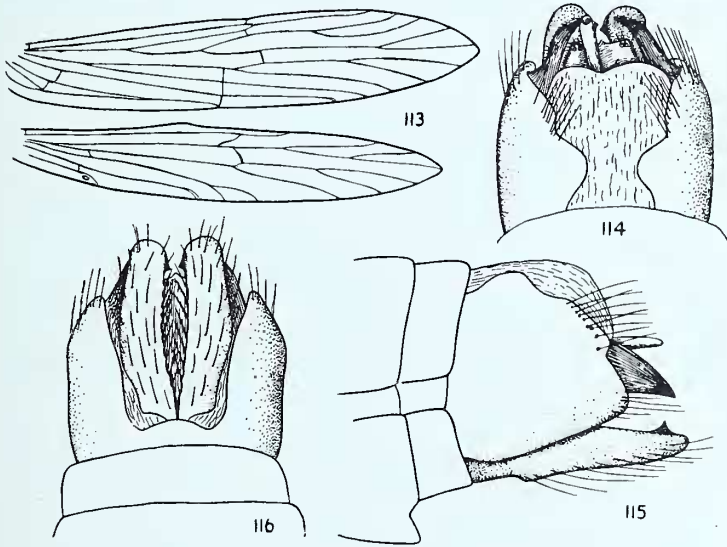
Antennae about 43 jointed in ♂, broken in ♀; ocelli present; spurs 0, 3, 4; neururation complete as indicated in the figure.

Genotype: *Ugandatrichia minor* sp. n.

Ugandatrichia minor sp. n. (Figs. 113-116)

Insect deep black; anterior wings covered with erect, clavate, black hairs; other characters are detailed in the generic description.

Genitalia ♂. From above, the ninth dorsal segment is excised to its base, the sides of the excision sinuous; there is a membranous dorsal plate and a pair of very strong, black, incurving appendages beneath it; penis straight with a membranous outer sleeve; lower penis-cover broad, rectangular with a pair



Figs. 113-116.—*Ugandatrichia minor* sp. n. ♂: 113. wings, 114. genitalia, dorsal, 115. lateral, 116. ventral.

of bristles at each apical angle; inferior appendages large, from below, finger-shaped, nearly parallel, bearing on the upper surface, towards the inner apical margin, a short, pointed, deep-black spur; a short, keel-like process to the seventh ventral segment.

Length of the anterior wing, ♂ 2 mm.

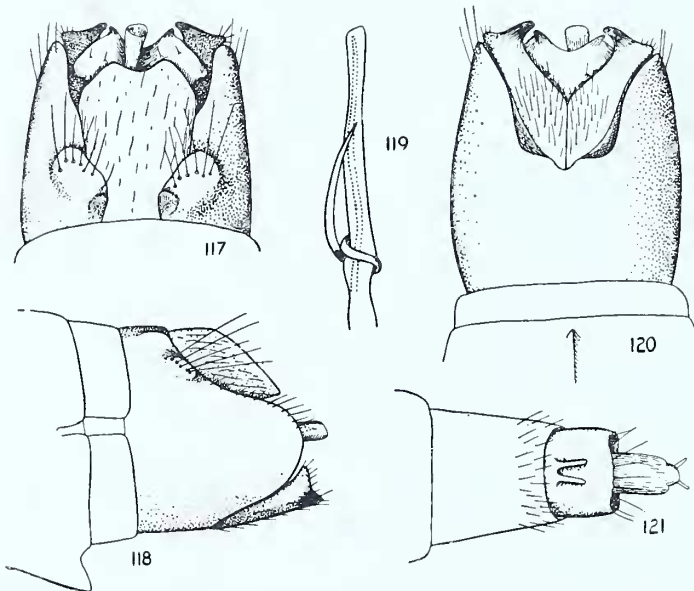
KENYA: Thomson's Falls, 7500 ft., N. of Nakuru, 6.iii.1935 (*Edwards*).
1 ♂ (type).

Ugandatrichia nigra sp. n. (Figs. 117-121)

Wings black, densely covered with black, clavate hairs. Neuration as in *U. minor*.

Genitalia ♂. Ninth segment very deep; from above, excised widely to its base, much produced and rounded from the side, deeply excised from beneath;

from above, on each inner margin of the excision, at the base, is a large, rounded bulge of which the distal border is armed with a clump of stout hairs; the basal part carries another smaller bulge which is covered with minute, pointed setae; in the excision is a broad, membranous dorsal plate, apical margin excised; penis of the usual pattern in the Hydroptilidae, consisting of a long, fairly straight tube through which passes a central duct and with a sheath curled round the middle with its pointed apex free; beneath the penis is a broad lower penis-cover, apical margin with a wide excision, the apical angles produced in



Figs. 117-121.—*Ugandatrichia nigra* sp. n.: 117. ♂ genitalia, dorsal, 118. lateral, 119. penis, 120. genitalia ventral, 121. ♀ genitalia, ventral.

blackened spurs; inferior appendages from beneath, appear as a pair of legs, widely straddled, with the toes of the foot blackened and directed inwards, a small wart armed with a few bristles on each heel; a short, keel-like process to the seventh ventral segment.

Genitalia ♀. On the under surface of the ninth ventral segment is a small, bifurcate process, the forks short, rod-like and divergent; margin of the segment fringed with widely-separated, long hairs; a short, keel-like process to the seventh ventral segment.

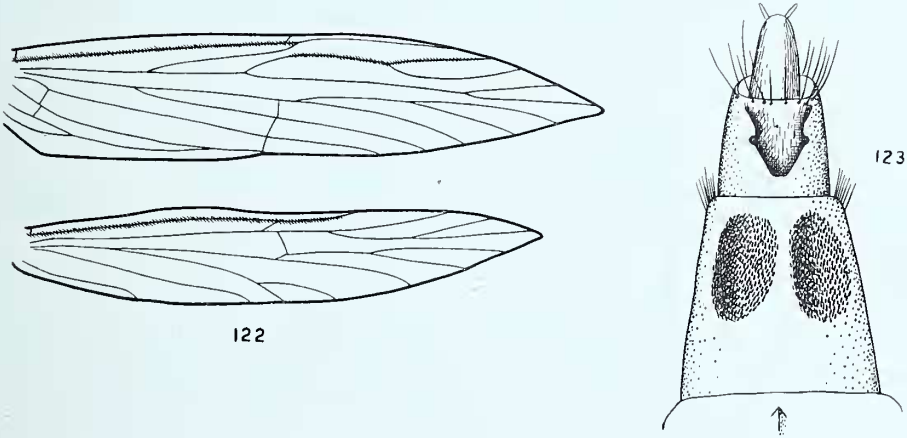
Length of the anterior wing, ♂ 4.5 mm., ♀ 5 mm.

RUWENZORI: Namwamba Valley, 6500 ft. (*Edwards*). 1 ♂ (type). 1 ♀.

Ugandatrichia acuta sp. n. (Figs. 122-123)

I am departing from my usual practice and am giving a name to this female insect as I think the characters provided by the shape of the wings (if not aberrant) and the pattern of the genitalia are sufficient for its future recognition.

The insect is black all over; anterior wings densely covered with upright, clavate hairs; the apices of both wings are very considerably produced and pointed; in this respect, they differ from the other two species described in the



Figs. 122-123.—*Ugandatrichia acuta* sp. n. ♀: 122. wings, 123. genitalia, ventral.

genus although the neuration conforms excepting in so far as it has been modified by the produced apices.

On the surface of the eighth ventral segment are two oval patches covered with minute, scale-like hairs and on the ninth is an urn-shaped design with projecting knobs on each side about midway along the outer margins; a small keel-like process to the seventh ventral segment.

Length of anterior wing, ♀ 4.5 mm.

KENYA: Chania Falls, 4000 ft., near Nairobi, 3.x.1934 (*Edwards*). 1 ♀ (type).

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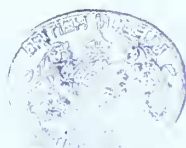
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PRESENTED

15 MAR 1939



Plate I

RUWENZORI

Stream in Namwamba Valley near Butama, 6000 feet
Habitat of *Chimarra zoria* Mosely

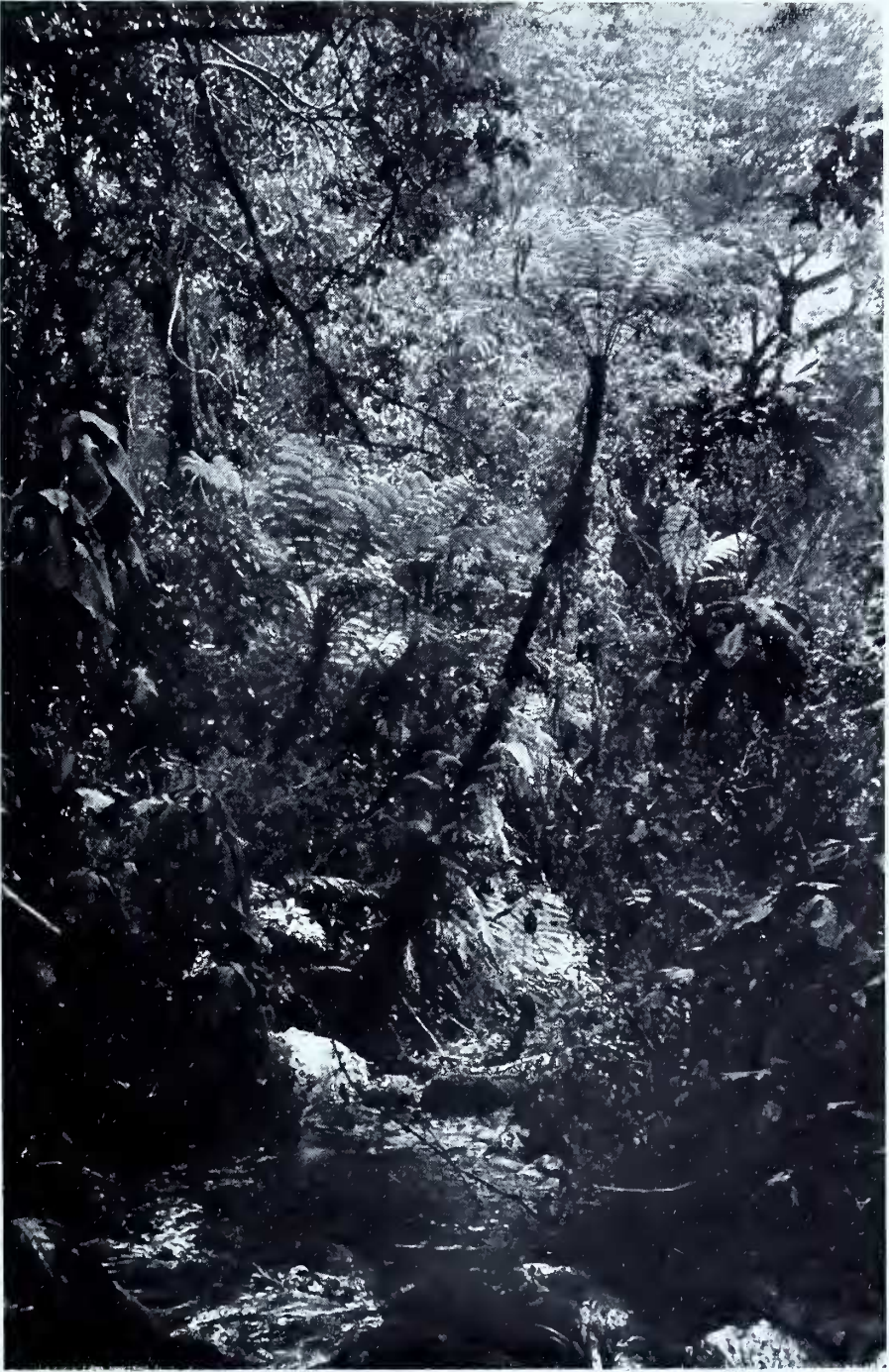




Plate II

Thomson's Falls, north of Nakuru, Kenya
Habitat of *Ugandatrichia minor* Mosely





Plate III
Chania Falls, north-east of Nairobi, Kenya
Habitat of *Ugandatrichia acuta* Mosely

